tween Wivenhoe and Langenhoe? In that case does it not also suggest the *local* character of the earthquake?

Langenhoe and the adjacent villages, with the Isle of Mersea close by and in full view, appear to form the focus of the disturbance. So far as I have been able to learn, the clocks stopped by the shock were those facing the north.

I see the newspapers refer to various cracks and fissures in the ground at Langenhoe, Abberton, Mersea, and elsewhere, as having been caused by the earthquake. I saw numbers of them, but in every instance they were the ordinary cracks which always appear in the London Clay during a drought, or after a spell of dry weather like that of the last three weeks. In none of the instances I saw had the fissures anything to do with the earthquake.

The local character of the area of chief disturbance is not only indicated by the different directions in which the rubbish was thrown from the battlements of Wivenhoe and Langenhoe Churches relatively, but also by the fact that whilst the western side of Mersea Island suffered severely, the eastern side was only slightly affected in comparison.

Museum, Ipswich, April 26 J. E. TAYLOR

THE earthquake was felt here very plainly, and I am able to give some evidence as to the amount of oscillation experienced at the moment when the wave passed under Cambridge. I happened to be looking at my marine aquaria at rather more than twenty minutes past nine on Tuesday morning (I regret I did not notice the *exact* time, but that was about it), and the water in them distinctly moved. The oscillation was not violent, as if produced by a concussion in the air, such as an explosion would cause, but rather as if the table on which the aquaria stand had been tilted up to the extent of an inch, and in the direction of a line running east and west. I was looking more particularly at a very shallow aquarium in which I keep shrimps, mussels, and sand-loving annelids, and one portion of which has less than a quarter of an inch depth of water. This was tilted up so much that the sand at the shallow end was quite uncovered by the water, and my first thought was that evaporation had taken place during the preceding night to such an extent as to endanger the lives of the nereids and other creatures; I therefore went hastily for some fresh water, but upon returning with it in a minute I found the water at its normal level, and I had no necessity to pour any fresh in. I remember, too, that I was sensible of a slight giddiness at the time, and the house and everything in it seemed to be moving. The sensation indeed was much like being on shipboard. I had no suspicion of the real cause, but thought it was a slight faintness, as I had not then breakfasted.

Mill Road, Cambridge, April 23 ALBERT H. WATERS

THE following memoranda may be of interest:—On January 8, 1869, I was with Prof. Dawkins, engaged in examining the late Mr. Whincopp's collection at Woodbridge, Suffolk. On my way home I was delayed three hours at Bury St. Edmund's in consequence of a luggage-train having broken down to the eastward. While there I was told that an earthquake had been felt that day at Thurston, Elmswell, and Haughley, places between Ipswich and Bury. It was reported that a workman, sitting eating his luncheon on the bank, saw the rails move. Mentioning this when I returned home, I was told that the policeman in this village had felt a shock. I therefore interviewed him and made the following note:—"January 15, 1869: P.C. Redhouse, when near the 'Hare and Hounds'" (which is a few hundred yards south of my house) "on Sunday morning the 3rd, about 2 a.m., heard a sound like heavy distant guns, which seemed to shake him and to make him reel. He was walking fast, and stopped. There was no shake after the sound. He thought there were six or seven reports in a couple of seconds. The movement was from north to south. There were three sounds before he stopped, and three afterwards. He did not regain his steadiness for two or three chains' distance. The sounds were very heavy, and he went home in alarm." I was awakened the same night by a tremor of the bed. This occurred a week before the shock in Suffolk. The late earthquake was preceded at Langenhoe by a slighter one on February 18.

A yacht captain at Wivenhoe happened, on the 22nd inst., to witness the effects from the top of a ladder. Hearing a rumbling sound, he looked about him and saw the church and all the houses rocking about, some one way and some another, "like a lot of pleasure-boats at the seaside with a gentle swell on." This seems to show that the length of the wave could not have been great, but that it must have been in opposite places withi a few hundred yards. Knowing the district well, it strikes me as remarkable that the strength of the shock should have been so much localised, while the distance over which it was slightly felt was so extended. O. FISHER

Harlton, Cambridge, April 28

ALTHOUGH this Observatory does not possess a seismograph, yet the passage of yesterday's earthquake wave was recorded by the magnetographs, although I am not aware the shock was felt by any one in this neighbourhood. It was registered at 9.17–18 a.m. G.M.T., and from the fact that the disturbance of the horizontal force magnetometer was the greatest, we infer that the terrestrial movement was rather north and south than east and west. G. M. WHIPPLE

Kew Observatory, Richmond, Surrey, April 23

PROBABLY one of the extreme limits of the action of the earthquake of April 22 was at Street, Somerset, ten miles beyond the Mendip main anticline. There it was *certainly* felt by an invalid lady, who mentioned it at midday dinner, only a few hours after, no news having been received, of course, from other parts. Has there been any certain record of it north of the concealed Palæozoic ridge across the North Midland counties?

York, April 28 J. EDMUND CLARK

NOTES

AT the meeting of the Executive Committee of the City and Guilds of London Institute held on Tuesday, the following appointments were made at the Central Institution, Exhibition Road:—To the Professorship of Chemistry, Henry Armstrong, Ph.D., F.R.S., of the Technical College, Finsbury; to the Professorship of Engineering, W. C. Unwin, D.Sc., of the Royal Engineering College, Cooper's Hill; to the Professorship of Mechanics and Mathematics, Olaus Henrici, Ph.D., F.R.S., of University College, London; to the Professorship of Physics, Oliver Lodge, D.Sc., of University College, Liverpool.

IN a crowded house on Tuesday last the Convocation of the University of Oxford passed the much-debated statute allowing women to enter for "certain of the honour examinations of the University." The statute has been opposed on very different grounds. The old Conservative Oxford School (fast becoming extinct among the resident teachers) of course objected to any change in favour of the higher education of women; with them went a portion of the High Church party, who look with disfavour on any proposal tending to bring women into intellectual competition with men. Others, again, opposed the statute on the ground that it was unfair to men, who have to keep certain terms and pass certain examinations within a specified time if they wish to enter for an honour school, whereas the statute allows women to enter for honours without the same preliminary examinations, and without restrictions as to time and residence. Others again feared an influx of young ladies into Oxford, as likely to destroy the manliness of the undergraduates and spoil the natural modesty of the lady students. To these arguments the success which the present halls for ladies in Oxford have met with is the best answer. Their presence has not revolutionised the University; they have not been a stumbling-block to discipline nor a rock of offence to the Church. The women's examinations, conducted by the delegates, were exactly on the same subjects, and the papers were set by the same men, as in the men's honour examinations before this statute passed. Now the same papers will serve for both, trouble will be saved, and the women who obtain honours will win a certificate universally recognised throughout the country. Oxford is to be congratulated on Tuesday's vote.

THE Rede Lecture at Cambridge University will be delivered on May 28 by Mr. Francis Galton, the subject of the lecture being "The Measurement of Human Faculty."

We are informed that tickets have been applied for as follows for the Montreal meeting of the British Association :—Members elected prior to October 1882, 379; Members elected since October 1882, 181; Associates (relations of Members), 120; total, 680.

The International Geological Congress will hold its meeting in Berlin this year, towards the end of September.

The International Polar Conference concluded its labours last Thursday.

In reference to the recent sunsets a correspondent writes that Graham's Island was in eruption, throwing out vast quantities of steam, ashes, and cinders from July 19 to August 16, 1831, and in connection therewith sends us the following extract from a letter written from Malta, January 28, 1832 (see *Phil. Trans.* 1832) :—"In the month of August a singular appearance was witnessed in the heavens, many evenings successively, both here and in Sicily. Soon after sunset the western sky became of a dark, lurid red, which extended almost to the zenith, and continued gradually diminishing in extent and intensity even beyond the limit of twilight. This phenomenon, too, was attributed to the volcano, and was supposed by many people, whom it greatly alarmed, to be portentous of some impending calamity." Our correspondent also sends us the following old translation of Virgil's "Georgics," Book i. line 542 :—

"He, too, bewailing her unhappy doom
When fell her glorious Cæsar, pitied Rome,
With dusky redness veiled his cheerful light,
And impious mortals feared eternal night;
Then, too, the trembling earth and seas that raged,
And dogs and boding birds dire ill presaged;
What globes of flame hath thundering Etna thrown,
What heaps of sulphur mixed with molten stone,
From her burst entrails did she oft expire,
And deluge the Cyclopean fields with fire."

The Kew Committee of the Royal Society have affiliated to the Department for the examination and verification of scientific instruments a branch which will rate watches for either makers or the public on very moderate terms.

The Council of the Royal Geographical Society have decided to appoint for one year an inspector, to inquire thoroughly into and report on the state of geographical education at home and on the Continent. In addition to studying the best methods of geographical teaching—chiefly probably in Germany and Switzerland—he will be required to collect and report on the best text-books, maps, models, and appliances. His honorarium will be 250*l.*, to include travelling expenses, but not the purchase of books, &c., which will be defrayed by the Society on the selection being approved by the Council.

Science in Japan has recently suffered a severe loss by the death of Dr. A. J. C. Geerts, which took place at Yokohama towards the end of last year at the early age of forty. He had been for fifteen years in the employment of the Japanese Government, and a few weeks before his death his services had been recognised by the Emperor, who conferred on him the Order of the Rising Sun. Dr. Geerts was originally Professor of Chemistry in the School of Military Medicine at Utrecht, and in 1868 was offered by the Japanese Government the post of Professor of Natural Science at the Medical School then recently established at Nagasaki. After occupying this position for five years he was nominated adviser to the Department of Hygiene and Public Health in Tokio, and was also charged with the establishment of a chemical laboratory at Kiôtô. In 1877 he established a similar institution in Yokohama, where his duties consisted chiefly in the testing of foreign drugs imported for sale amongst the Japanese, and this position he held at the time of his death. Like every other European in the Japanese Government service whose duty compels him to stand between his own countrymen and the natives, and to hold an even balance between the claims of both, his work was frequently of a harassing and unpleasant description; nevertheless he found time to write numerous works on Japan. His papers on Japanese mineral products, communicated during a number of years to the two learned societies in Japan, are of much value. He also published a Japanese Pharmacopœia, an account of the numerous mineral springs in Japan, and finally he commenced, and actually published, two volumes of an encyclopædic work entitled "Produits de la Nature Japonaise et Chinoise," in which he intended to describe the names, history, and application "to arts, industry, economy, medicine, &c., of substances derived from the three kingdoms of nature, and which are employed by the Japanese and Chinese." The formidable nature of this title is in no degree diminished when we come to examine the torso of the work itself. Ordinary men, who bear in mind that human life and human powers are limited, can only stand amazed at the conception of this work; for the author not only ransacked all that had ever been written on China and Japan in Europe, but also examined the whole of Chinese and Japanese literature before he sat down to write even the most insignificant article. In the section "Iron" alone one finds about 200 references to works in all literatures and of all ages. Each section contains the Japanese and Chinese legends respecting the origin and discovery of the production which formed its subject, the places where it has been or is now found, the primitive modes of obtaining it, the various qualities ascribed to it, its employment in arts and industry, &c. From this method of writing, it was inevitable that the work should bear the appearance of a hotch-potch, an *omnium gatherum* of fact and myth; but we could at least feel sure that in each section all that had ever been known of the subject was given. The work was really beyond the power of any single individual, and, if it were to be brought to an end at all, should have been executed on some extensive plan of cooperation similar to that employed in Dr. Murray's English Dictionary. As an example of the minute care bestowed on each point, it may be mentioned that in dealing with "Jade" the author gives two Latin synonyms, two Chinese, thirteen Japanese, a Spanish, a Manchu, a Turkish, a Persian, an Arab, and a Maori synonym.

Lieut. B. Baden-Powell, Scots Guards, made an ascent in his own balloon from Aldershot on Monday last week. The weather at the time of starting (4.30) was threatening and the wind fresh from the north-east. On rising to a height of 4000 feet, a lovely cloudscape was seen, the sky overhead being clear and blue, and a sea of clouds stretching around with very distinct horizon. Below, the earth could be seen through the haze, on which the shadow of the balloon was thrown, a bright halo surrounding the car. The descent was made at a quarter to six, about twenty miles off.

Mr. H. O. Forbes writes :—In a note received from the ex-Governor of Timor (now in Lisbon) I learn that a violent earthquake was experienced in Dilly on November 11, which destroyed the hospital and also damaged the church and other edifices, but without loss of life.

The last number of the *Journal of the Straits Branch of the Royal Asiatic Society* (Singapore, 1883) has the continuation of Capt. Kelham's notes on the ornithology of the Straits Settlements and the western States of the Malay Peninsula; also a collection of Malay proverbs, by Mr. Maxwell. Mr. Cameron contributes a paper on the Patani, the most considerable river of the peninsula, which flows northwards into the Gulf of Siam. An article of extraordinary interest is that on *latah*, a nervous disorder among Malays, or rather the native name applied to

those who labour under the disorder. "It includes all persons of a peculiarly nervous organisation, ranging from those who, from their mental constitution, seem absolutely subservient to another's will, down to those who appear merely of a markedly excitable temperament." Numerous examples of the effect of this mysterious mental affection are added by the writer, Mr. H. A. O'Brien.

WE gladly notice the issue of three new numbers of the *Encyclopædia of Natural Sciences*, from the publishing house of Eduard Trewendt, in Breslau. The tenth number is now out of the *Alphabetical Manual of Zoology, Anthropology, and Ethnology* (part i. l. 36), which with this new instalment has completed its "F," and entered on its "G." The number referred to contains very valuable articles contributed by Gustav Jäger, Reichenow, von Mojsisowics, Roeckl, von Hellwald, Sussdorf, and others. Nos. 19 and 20 of the second part of the collective work have also appeared, both belonging to the *Dictionary of Chemistry*, edited by Ladenberg. Among other valuable articles in No. 19, by Ladenburg, Biedermann, Weddige, and Jacobsen, "Azoverbindungen," by Heumann, and "Benzœsäure" by Weddige, are treated with special completeness. In No. 20 are articles by Engler, Drechsel, Biedermann, and others. These two numbers bring the *Dictionary of Chemistry* to the end of "B." We again wish all success to this comprehensive collective work on the natural sciences.

MM. HENRY are experimenting with a system of photography for double-stars, in order to determine their distance and position angle. They have already obtained good results on about twenty stars in various constellations.

M. LEVEAU has been appointed Astronome Titulaire at the Paris Observatory, in place of the late M. Yvon Villarceau.

IN a small pamphlet published at Saigon ("Memoire sur les Poissons de la Rivière de Hué," C. Guilland et Martinon), M. Tirant, the Administrator of Native Affairs, has given a catalogue of the fish to be found in the river of Hué, the capital of Annam, and in the adjacent lagoons. These latter are exceedingly numerous, running parallel to the sea for miles, and are filled during the rainy season by the overflow from the rivers. They are employed as reservoirs for the fish supply of the capital. In them, and in the river itself, Dr. Tirant states he procured seventy new species of fish.

INFORMATION has recently been received in Paris of the death of M. Bruel, one of the most enterprising of French explorers in Cochin China. He was murdered by pirates on January 18 in Cambodia, on the frontier of the Laos country.

THE additions to the Zoological Society's Gardens during the past week include a Rhesus Monkey (*Macacus rhesus* ♂) from Continental India, presented by Mr. A. MacDonnett Green; a Common Fox (*Canis vulpes*), British, presented by Miss Bertha Haig; a Herring Gull (*Larus argentatus*), European, presented by Mr. R. Morton Middleton, jun.; a Green Lizard (*Lacerta viridis*), European, presented by Mr. J. H. Leech; three Russell's Vipers (*Vipera russelli*) from Ceylon, two Indian Rat Snakes (*Pytas mucosa*), an Indian Python (*Python molurus*), an Indian River Snake (*Tropidonotus quincunciatus*), two Indian Cobras (*Naia tripudians*) from India, presented by Mr. Gerald Waller; a Gray Ichneumon (*Herpestes griseus*) from India, a Short-headed Phalanger (*Belideus breviceps*) from Australia, three Lesser Birds of Paradise (*Paradisea minor*), two Red-sided Eclectus (*Eclectus pectoralis*) from New Guinea, a Chattering Lory (*Lorius garrulus*), a Three-coloured Lory (*Lorius tricolor*) from Moluccas, deposited; a Dusky Parrot (*Pionus violaceus*) from Guiana, received in exchange; a Smooth-headed Capuchin (*Cebus monachus*) from South-East Brazil, a Severe Macaw (*Ara severa*) from Brazil, two Schlegel's Doves (*Chalcopelia puella*), a Buffon's Touracou (*Corythaix buffoni*) from West Africa, a Diademed Amazon (*Chrysotis diademata*), a Yellow-shouldered Amazon (*Chrysotis ochroptera*) from South America, a Banded Aracari (*Pteroglossus torquatus*) from Central America, received on approval; a Mediterranean Seal (*Monachus albiventer*) from the Mediterranean, two Chinchillas (*Chinchilla lanigera*) from Chili, an Anaconda (*Eunectes murinus*) from South America, purchased.

OUR ASTRONOMICAL COLUMN

THE SOUTHERN COMET (ROSS, JANUARY 7).—Adopting Mr. Tebbutt's elements copied into this column last week, we have the following positions of the comet observed at Melbourne and Windsor, N.S.W., for 6h. Greenwich mean time:—

1883	R.A. h. m. s.	N.P.D. ° ′	Log. distance from Earth	Log. distance from Sun
Dec. 16	17 4 30	93 56·9	0·0561	9·6151
18	17 12 4	94 3·2	0·0232	9·5758
20	17 21 35	94 34·4	9·9864	9·5393
22	17 33 53	95 44·7	9·9463	9·5102
24	17 49 54	97 50·8	9·9046	9·4934
26	18 10 31	101 6·2	9·8651	9·4930
28	18 36 2	105 29·2	9·8332	9·5090
30	19 5 47	110 35·5	9·8144	9·5376

This ephemeris, founded upon an orbit which is certainly not open to material correction, enables us to decide that the supposed comet which was seen in Tasmania on the mornings of December 25 and 27, rising a few minutes before the sun, could not have been the comet detected by Mr. Ross on January 7, which on those mornings would not rise (at New Norfolk, for instance) till upwards of forty minutes after the sun; on December 25 the sun rose there at 4h. 21m., the comet at 5h. 2m.

It is not easy to reconcile the estimate of brightness at Melbourne on January 11 with that of Mr. Tebbutt on January 19. Mr. Ellery writes to the *Observatory* that on the former evening the comet disappeared in a faintly illuminated field, simultaneously with a tenth-magnitude star, while Mr. Tebbutt considered it on January 19 to be just beyond unassisted vision; yet the ratio of the theoretical intensity of light on the former date would be to that on the latter as 2·9 to 1.

The comet appears to have been well above the horizon in European latitudes before daylight, previous to the perihelion passage. Between December 17 and 21 it rose at Greenwich about 5h. 40m. a.m., but the presence of the moon would have rendered its discovery difficult. It was nearest to the earth on the morning of January 1, the distance being then 0·646 (the earth's mean distance from the sun = 1).

THE ASPECT OF URANUS.—At the sitting of the Academy of Sciences of Paris on April 21, M. Perrotin presented a note on the aspect of Uranus, from observations made with the 15-inch equatorial at the Observatory of Nice. On March 18 he had remarked, in company with Mr. Lockyer, a bright spot near the lower limb of the planet, as seen in the inverting telescope. Further observations showed that it was near the equator of Uranus. It was a very difficult object, and much uncertainty existed as to its exact position; it was better seen as it approached the limb. It was observed on April 1 about 11h., at the northern extremity of the equatorial diameter, and on the next night about 10h. 40m., at the southern extremity: it occupied the same position on April 7 at 10h. 30m., and April 12 at 11h. These observations, M. Perrotin adds, made at the limits of visibility, required very favourable conditions, and being aware of the possibility of illusion in such a case, he invites the attention of observers possessed of powerful optical means, in order to control his own impressions. The appearance and the indeterminateness in the duration of the phenomenon on April 1, when the images were best, rather point to a luminous belt than to a single spot, which introduces uncertainty in the times of the observations; with due regard to this, M. Perrotin finds a fair agreement with the assumption of a rotation not differing much from ten hours. On April 12 Mr. Trépied was present, and confirmed the impressions received by the Nice astronomer; he also remarked in the bright part a condensation which had previously escaped notice.

By "diamètre equatorial" we presume M. Perrotin refers to the diameter in the plane of the orbits of the satellites.